MULTI-PASS PHASE TRACKING LOOP WITH REWIND OF CURRENT COMMUNICATIONS WAVEFORM

ABSTRACT OF THE DISCLOSURE

A demodulator demodulates a modulated signal waveform in a data communication system. A phase tracking loop tracks the phase of said modulated signal waveform and having an inner block decoder configured to decode a set of vector pairs of the modulated signal waveform at a decode rate to generate associated codewords and phase estimates. A group of data symbols consisting of the first data symbols of the modulated signal waveform are run backwards through the phase tracking loop. An outer block decoder receives the associated codewords generated by said inner block decoder and utilizes and corrects only codewords associated with symbols after and including the group of data symbols consisting of the first data symbols of the modulated signal waveform.